

The invention relates to a method for flow control in a switch and a switch controlled thereby. In order to ensure that no or few packets are dropped in a switch because of a congested internal memory, pause frames or stop command messages are sent to upstream senders. When to send pause frames are determined by monitoring the buffer contents of the switch and estimating the total expected contents of the links between the senders and the switch. The pause frames are sent to the most offending senders, i.e. the senders causing the largest queues in the switch. The switch comprises: a number of input ports, each receiving data cells on a respective link; a number of output ports sharing a buffer space in which each output port can reserve space for an output queue, wherein incoming data cells are switched to an appropriate output queue; a flow control means for pausing and unpausing senders on selected links; and the method includes the steps of: monitoring the remaining available buffer space AS of the shared buffer; estimating the expected total content LE of the links; calculating a free margin (FM) as the remaining available buffer space minus the expected total content of the links  $FM=AS-LE$ . If the free margin sinks below a threshold  $AS-LE < A$ , then a selected link is paused; and if the free margin thereafter raises above a threshold  $AS-LE > B$ , then a selected paused link is un-paused.